LATR Assessment

Transportation Impact Study Technical Working Group (TISTWG)

Meeting #2

10/1/14 Meeting Packet #2A

(Note: Meeting Packet #1 sent 9/26/14 and some slides added to Packet #2 sent 9/29/14)

Literature Review outline

- Executive summary
- Overarching issues – what are communities looking to achieve?
  - Multimodalism
  - Private sector cost/predictability
  - Capital (all modes) vs operating (traditionally TDM, transit) elements
- State of the practice as adopted
  - Balance of exaction types
  - Performance measures
- Where the industry is headed
  - ITE Trip Generation – person trips
  - SB 743 – performance measures
  - Customized analyses (i.e. White Flint, Atlantic Station)
- Appendix: Jurisdictional case studies / templates
  - Jurisdictional context
  - Development impact policy tools:
    - Local transportation test
    - Areawide test
    - Fees/taxes
  - Context sensitive variance
  - Localized Transportation Impact Studies
    - Analysis tools and thresholds
    - Mitigation techniques / priorities
  - Areawide Review
    - Description customized to type of review
  - Transportation Impact Tax or Fee
    - Calculation basis
  - Other tools if applicable
  - Where is the jurisdiction heading next?

Literature Review effort began with literature review of selected jurisdictions.
For 10/1 TISTWG Meeting, PPT slides summarize initial findings.
Draft Appendix materials follow slides.

LATR findings

Overview:

- Most analytic processes remain auto-oriented in County-level jurisdictions; more multimodal in incorporated cities

Common multimodal analysis techniques across all types of jurisdictions

- Intersection (vehicular) level of service
- Conducting pedestrian and bicycle counts
- Assessing general pedestrian and bicycle conditions

Additional techniques typical in fully urban jurisdictions

- Identifying on-street parking supply/demand
- Identifying transit capacity constraints

Pay-and-go techniques work in small, well-defined districts with monitoring/updates

LATR issues

Concerns from RFP and TISTWG Meeting #1 influencing literature review and proposed study approach.

LATR changes should affect:

- **Analysis** to be more context-sensitive, less auto-centric, and more supportive of County's growth plans
- **Predictability**, with interests for both increased flexibility and increased process streamlining
- **Implementation** to improve public/private sector coordination

LATR findings

Innovative **Analysis**, setting context-sensitive thresholds:

- By geography (New York, NY)
- By mode (Washington, DC)
- By function (King County, WA)
- By performance objectives (Pasadena, CA proposed)

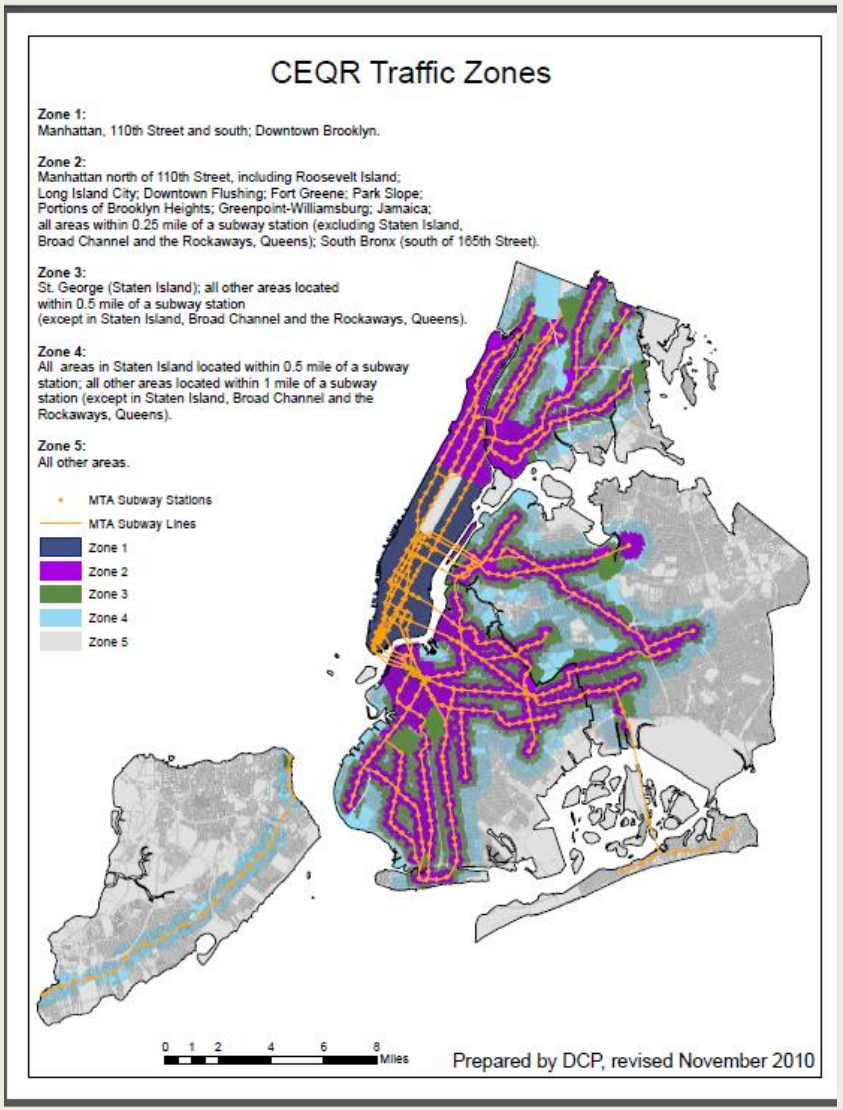
Improved **Predictability** / Streamlined **Implementation**

- Protected Intersections (San Jose, CA)
- Multimodal Transportation District (Kissimmee, FL)
- Mitigation Payment System (King County, WA)
- Screenline Standards (Seattle, WA)
- Transit Revitalization District (Pittsburgh, PA)

LATR innovation

Geographic and multimodal traffic study thresholds (New York, NY)

Five zone system with development thresholds intended to trigger study at 50 vehicle trips, 200 transit trips, and 200 ped/bike trips



LATR innovation

Comprehensive Transportation Review (Washington, DC)

- 2012 beta version document
- CTR study if 50 *person* trips, mode share part of application; mode-specific analytics:

Mode	Auto	Bike/Ped	Transit	TDM
Thresholds for modal analysis (peak hour trips)	25 vehicle trips (peak direction)	100 ped/bike trips or site size	50 transit trips, 30% mode share	50 vehicle trips or parking variance
Requirements	LOS E (80 sec) Queuing VMT/GHG	Assess safety (increased exposure)	Demonstrate capacity	TDM Plan
Mitigation	Roadway (but no delay to other modes); TDM Plan	Improvements (minimal effect on other modes)	Stop/shelter, info improvements (per WMATA guidance)	Implement and monitor

LATR innovation

Intersection impact (King County, WA)

14.80.030 Significant adverse impacts. For the purposes of SEPA and this chapter, a significant adverse impact is defined as any traffic condition directly caused by proposed development that would reasonably result in one or more of the following conditions at the time any part of the development is completed and able to generate traffic:

A. A roadway intersection that provides access to a proposed development, and that will function at a level of service worse than "E", and that will carry thirty (30) or more added vehicles in any one hour period as a direct impact of the proposed development, and that will be impacted by at least twenty (20) percent of the new traffic generated from the proposed development in that same one hour period; or

B. A roadway intersection or approach lane where the director determines that a hazard to safety could reasonably result. (Ord. 11617 § 60, 1994).

LATR innovation

Blending VMT, congestion, and multimodalsim (Pasadena, CA proposal)

Metrics like VMT help change the discussion on developing TDM agreement services or metrics; surrogate measures may be more pragmatic.

METRIC		DESCRIPTION	IMPACT THRESHOLD (GENERAL PLAN)
1.	VMT Per Capita	Vehicle Miles Traveled (VMT) in the City of Pasadena per service population (population + jobs).	Any increase in Citywide VMT per Capita
2.	VT Per Capita	Vehicle Trips (VT) in the City of Pasadena per service population (population + jobs).	Any increase in Citywide VT per Capita
3.	Corridor Travel Times	Auto Travel Times for significant arterials in the City will be determined and forecasted using the Dynamic Traffic Assignment (DTA) Model.	Disclosure Only
4.	Auto Level of Service	Level of Service (LOS) as defined by the Transportation Research Board's *Highway Capacity Manual (HCM) 2010*. Uses intersection control delay to evaluate auto congestion	Any decrease beyond the established Minimum LOS D Threshold outside designated High Pedestrian Activity Areas.
5.	Proximity and Quality of Bicycle Network	Percent of dwelling units and jobs within a quarter mile of each of three bicycle facility types	Disclosure Only
6.	Proximity and Quality of Transit Network	Percent of jobs located within a quarter mile of each of three transit facility types. The Pedestrian Accessibility Score within each Traffic Analysis Zone (TAZ).	Disclosure Only
7.	Pedestrian Accessibility	The Pedestrian Accessibility Score uses the mix of destinations, and a network-based walk shed to evaluate walkability	Disclosure Only.

LATR innovation

Protected Intersections (San Jose, CA)

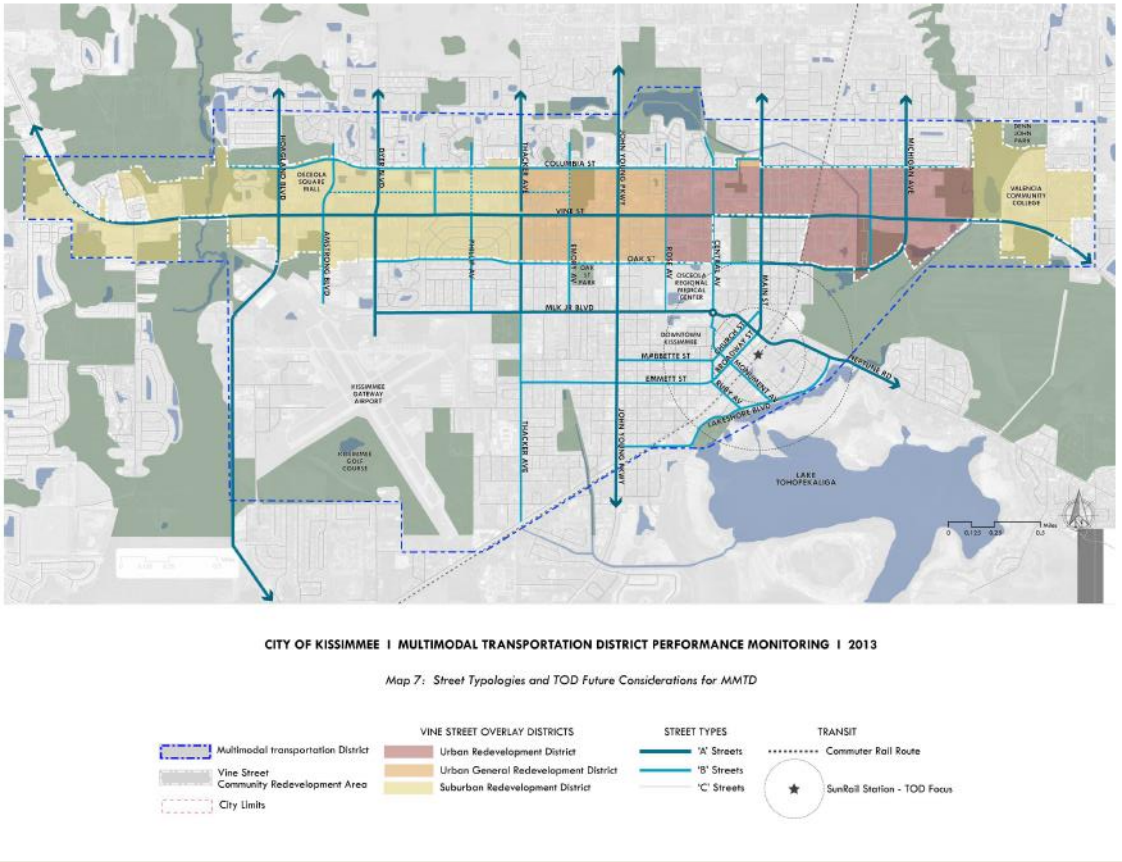
- Additional widening to achieve LOS D policy would adversely affect non-motorized travel
- Intersections exempted from improvement analysis (similar to LATR Potomac rule, but at other end of land use transect)

TABLE A1
PROTECTED INTERSECTIONS (AUGUST 2008)

#	Intersection	Special Planning Area	Community Improvement Zone
1	1st / Taylor	Transit Corridor	Jackson Taylor
2	4th / Jackson	Downtown Gateway	
3	4th / Hedding	Downtown Gateway	
4	10th / Hedding	Downtown Gateway Specific Plan Area	
5	10th / Taylor	Downtown Gateway Specific Plan Area	
6	11th / Taylor	Downtown Gateway Specific Plan Area	
7	Hedding / Oakland – 13th	Downtown Gateway Neighborhood Business	
8	10th / Julian	Downtown Gateway	University Neighborhoods
9	11th / Julian	Downtown Gateway	
10	10th / St. James	Downtown Gateway	
11	11th / St. James	Downtown Gateway	
12	11th / St. John	Downtown Gateway	
13	11th / Santa Clara	Downtown Gateway	
14	11th / San Antonio	Downtown Gateway	
15	10th / Reed	Downtown Gateway	
16	24th / Santa Clara	Transit Corridor	Five Wounds / Brookwood Terrace
17	7th / Virginia	Downtown Gateway	Spartan Keyes
18	The Alameda / Hedding	Downtown Gateway	Midtown North
19	Almaden / Grant	Downtown Gateway	Washington
20	Almaden / West Virginia	Downtown Gateway	
21	Vine / Grant	Downtown Gateway	
22	Capitol Avenue / McKee	Transit Corridor	Alum Rock
23	Capitol Avenue / Hostetter	Transit Corridor	Berryessa
24	Meridian / West San Carlos	Transit Corridor	Midtown South
25	Winchester / Stevens Creek	Transit Corridor	Winchester – Stevens Creek

LATR innovation

Kissimmee, FL established **Multimodal Transportation District** with 10 distinct zones based on urban form/travel characteristics (long vs. short trips). Identified long term multimodal improvement needs by district.



Traffic Studies only triggered at a DRI level; City analysis reveals that this scale of development is very unlikely without considerable consolidation of parcels for this scale of growth (2,000+ residential units)

LATR innovation

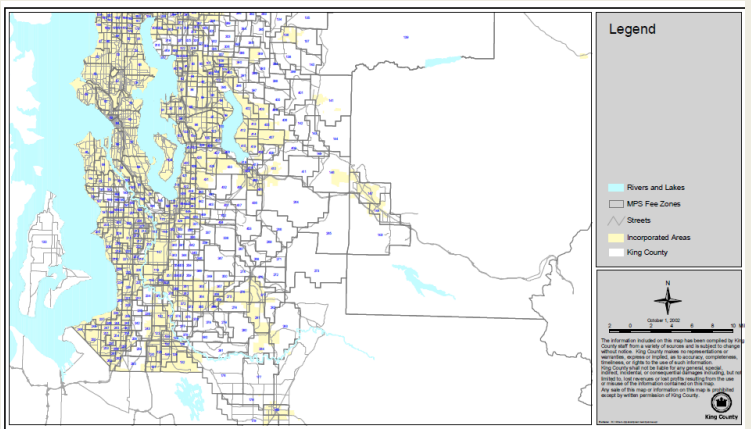
Kissimmee, FL: Mobility fees assessed to all new development. Calculations based on ITE trip generation rates. Mobility fee applied to all auto trips; trips divided into short/long trips relative to context (e.g. 30% long trips in downtown; 70% short trips elsewhere) mobility fee then calibrated to specific MMTD District needs and assessed as a proportionate fair share.

ITE LUC	Land Use	ITE Trip Generation Rate (ITE 9th Ed)	ITE Pass-by percentage	Number of Units / Square footage (e.g enter "10" for a 10,000 sq ft development where 1 unit = 1,000 sf)*	Estimated Trip Generation		Mobility Fee District (1 - 10)	Roadway	Multimodal	Citywide	Mobility Fee
	Residential:										
210	Single Family Detached/ Mobile Home Individual Lot	9.52	0%	30.000	285.60		4	$ 46,838.40	$ 8,568.00	$ 24,276.00	$ 79,682.40
220	Multi Family	6.65	0%	100.000	665.00		10	$ 13,300.00	$ 49,210.00	$ 56,525.00	$ 119,035.00
230	Condominium/Townhouse	5.81	0%	100.000	581.00		1	$ 66,234.00	$ 24,402.00	$ 49,385.00	$ 140,021.00
240	Mobile Home Park	4.99	0%		-			$ -	$ -	$ -	$ -
251	Age-Restricted Single Family	3.68	0%		-			$ -	$ -	$ -	$ -

LATR innovation

Mitigation Payment System (King County, WA)

- Traffic model used to define proportional need for capacity improvements by TAZ and set fees by DU.
- (Really, an impact fee test more so than LATR…)



Mitigation Payment System Zones

King County

2014 Fee Schedule for the Road Impact Mitigation Payment System

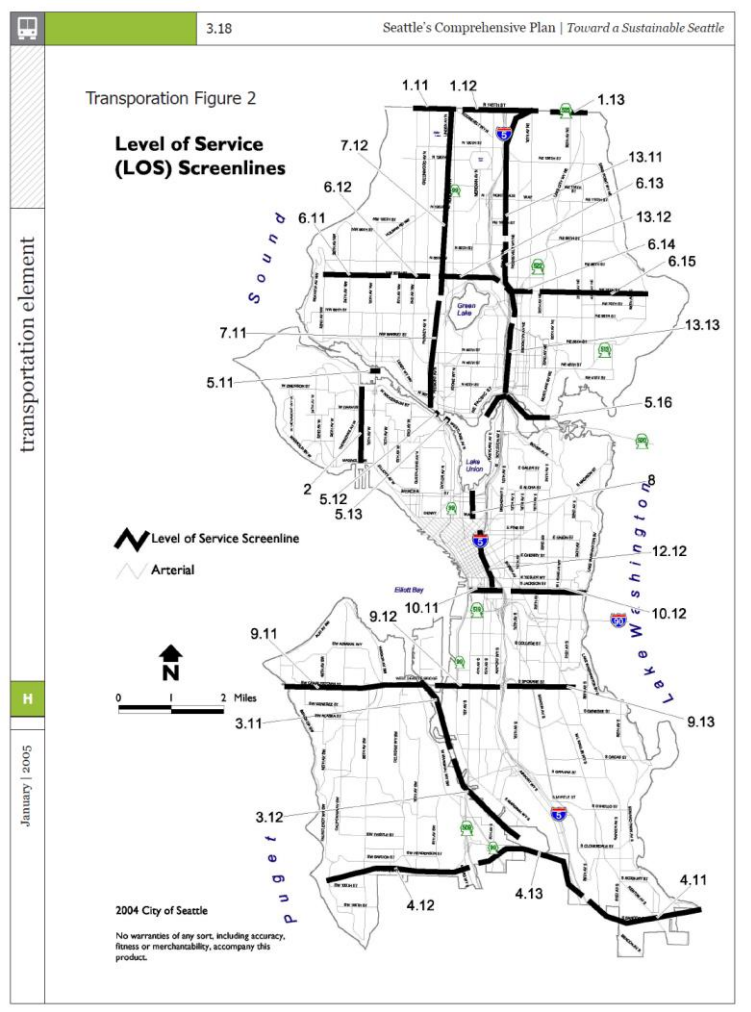
For each zone in King County, this schedule lists the fee per new single family dwelling unit (SF Fee) and new dwelling unit in a multiple family residence (MF Fee). Any zone not listed is subject to an SF Fee of $189.00 and an MF Fee of $113.40. In addition to the zone fee per dwelling unit, a program administration fee of $60 is charged per dwelling unit.

Zone	SF Fee	MF Fee	Zone	SF Fee	MF Fee	Zone	SF Fee	MF Fee
70	$43.00	$25.80	178	$99.00	$59.40	266	$1,430.00	$858.00
71	$42.00	$25.20	179	$94.00	$56.40	267	$182.00	$109.20
75	$37.00	$22.20	180	$152.00	$91.20	268	$261.00	$156.60
83	$23.00	$13.80	181	$154.00	$92.40	269	$273.00	$163.80
85	$17.00	$10.20	182	$166.00	$99.60	270	$178.00	$106.80
88	$24.00	$14.40	183	$195.00	$117.00	271	$641.00	$384.60
90	$32.00	$19.20	184	$227.00	$136.20	272	$508.00	$304.80
113	$227.00	$136.20	185	$544.00	$326.40	273	$503.00	$301.80
115	$173.00	$103.80	187	$231.00	$138.60	274	$311.00	$186.60
120	$188.00	$112.80	188	$181.00	$108.60	275	$146.00	$87.60
121	$168.00	$100.80	189	$279.00	$167.40	276	$146.00	$87.60
124	$120.00	$72.00	194	$242.00	$145.20	277	$194.00	$116.40
126	$270.00	$162.00	195	$195.00	$117.00	278	$210.00	$126.00
128	$150.00	$90.00	196	$227.00	$136.20	279	$139.00	$83.40
129	$272.00	$163.20	215	$224.00	$134.40	280	$199.00	$119.40
130	$377.00	$226.20	216	$253.00	$151.80	281	$259.00	$155.40
132	$521.00	$312.60	223	$310.00	$186.00	282	$701.00	$420.60

LATR innovation

Screenline LOS standards (Seattle, WA)

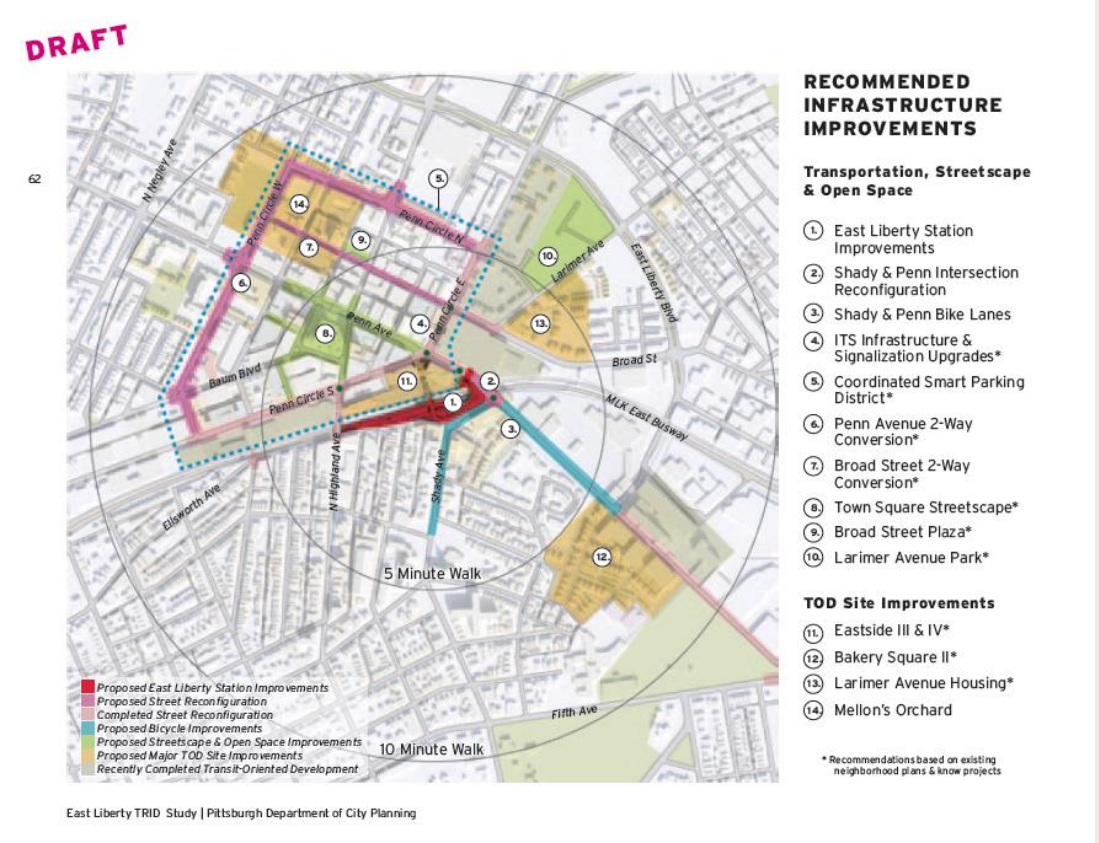
- Established in 2005 Comprehensive Plan (updated decennially, "Seattle 2035" now underway)
- Arterial LOS standards set by screenline crossing arterial roadways; each screenline has a 1.00 or 1.20 v/c ratio standard and 2020 forecasted v/c ratios within the standard.
- (Really, an areawide test more so than LATR…)



LATR innovation

Transit Revitalization Investment District (Pennsylvania)

- Enabling legislation (Act 238 of 2004) with proposed modification currently in committee
- TIF approach for transportation districts, but without finding of blight
- 12 planning studies statewide; East Liberty in Pittsburgh first TRID formed as of late 2013



LATR findings

Innovative next-generation concepts being considered:

- VMT as metric (California SB 743)
- Consider cap-and-trade for vehicle trips or parking spaces (Washington, DC; Arlington, VA)

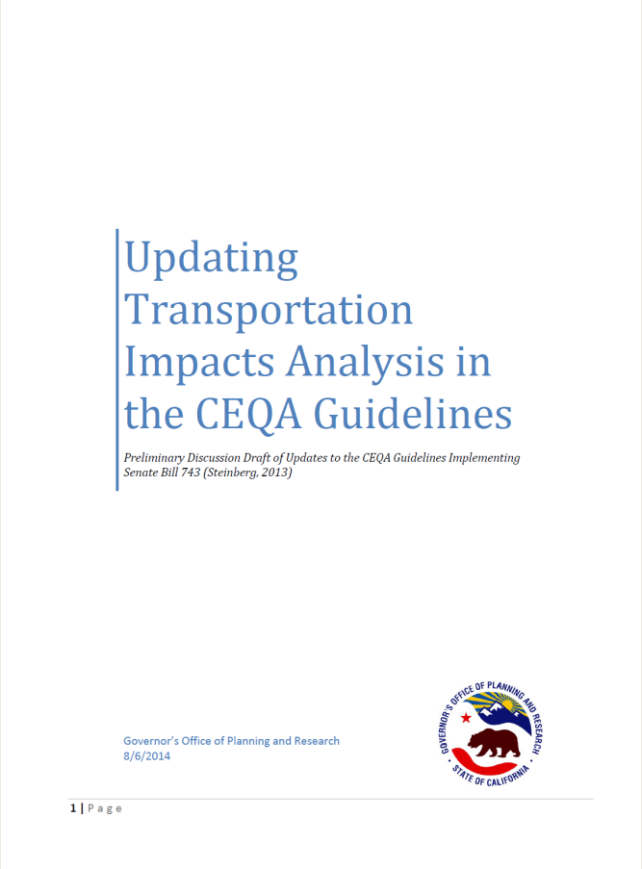
SB 743 Summary

Process:

- State removing auto LOS as a required California Environmental Quality Act (CEQA) criteria
- Locals still need to decide for selves
- Proposed changes to State law, comment period through October

Technical:

- OPR suggests VMT best replacement
  - Per unit
  - Significant impact if > regional average
  - Mitigation tools suggested, but silent on mitigation satisfaction
    - Do no harm?
    - Better than average?
    - Better than was?
- Addressing safety


Updating Transportation Impacts Analysis in the CEQA Guidelines

Preliminary Discussion Draft of Updates to the CEQA Guidelines Implementing Senate Bill 743 (Steinberg, 2013)

Governor's Office of Planning and Research
8/6/2014

1 | Page

http://www.opr.ca.gov/docs/Final_Preliminary_Discussion_Draft_of_Updates_Implementing_SB_743_080614.pdf

SB 743 Summary

OPR suggestions on minimizing VMT.

E. Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy. **Examples of project alternatives that may reduce vehicle miles traveled include, but are not limited to:**

1. Locating the project in an area of the region that already exhibits below average vehicle miles traveled.

2. Locating the project near transit.

3. Increasing project density.

4. Increasing the mix of uses within the project, or within the project's surroundings.

5. Increasing connectivity and/or intersection density on the project site.

6. Deploying management (e.g. pricing, vehicle occupancy requirements) on roadways or roadway lanes.

SB 743 Summary

OPR suggestions on mitigating VMT.

6. Potential measures to reduce vehicle miles traveled include, but are not limited to:

a. Improving or increasing access to transit.

b. Increasing access to common goods and services, such as groceries, schools, and daycare.

c. Incorporating affordable housing into the project.

d. Improving the jobs/housing fit of a community.

e. Incorporating neighborhood electric vehicle network.

f. Orienting the project toward transit, bicycle and pedestrian facilities.

g. Improving pedestrian or bicycle networks, or transit service.

h. Traffic calming.

i. Providing bicycle parking.

j. Limiting parking supply.

k. Unbundling parking costs.

l. Parking or roadway pricing or cash-out programs.

m. Implementing a commute reduction program.

n. Providing car-sharing, bike sharing, and ride-sharing programs.

o. Providing transit passes.

SB 743 Summary

Appendix F

Available Models for Estimating Vehicle Miles Traveled

Overview

Our ability to anticipate the transportation outcomes of land use development has increased greatly in recent years. Research undertaken by academics, consulting firms, and public agencies provide the basis for estimating future vehicle travel, and advances in computing power have allowed more sophisticated application of that research.

Models range in complexity and sensitivity to factors that can influence vehicle miles traveled, or VMT. Simpler tools make assumptions, but are easier to implement. More complex models consider more variables, but are not always necessary or feasible. Models generally fall into one of two categories:

Sketch models use statistical characterizations of land use projects and transportation networks to estimate project VMT. For example, a sketch model might characterize the transportation network using statistics like intersections per square mile and number of transit stops per day within a half mile, rather than actually containing a detailed representation of the network itself. They range in sophistication from simple spreadsheet tools, which often require a smaller number of inputs and are therefore easier to use but sensitive to fewer variables, to complex software packages. A number of sketch models can be downloaded free of charge.

Three sketch models commonly used in California include:

- Urban Emissions Model (URBEMIS) - *California Air Resources Board*
- California Emissions Estimator Model (CalEEMod) – *California Air Pollution Control Officers' Association*
- EPA Mixed-Use Development Model (MXD) - *U.S. EPA*

Travel demand models represent links and nodes in the transportation network explicitly rather than statistically. As a result, they generally require more data, maintenance, and run time than sketch models. Because of their greater complexity, and because their use is typically required for various statutory functions (e.g. determining air quality conformity), travel demand models are maintained by all MPOs and RTPAs, and also by some cities and counties. For this reason, a regional travel demand model already exists in most locations and can be used to develop estimates of VMT. Because they represent the transportation network explicitly, travel demand models are required when analyzing the VMT impacts of transportation projects.

Travel demand models can supply inputs for sketch models, particularly trip lengths; a single travel demand model run can supply these inputs for sketch model runs throughout the region. Travel

Identified VMT Analysis Tools

- VMT+
- RapidFire
- Transportation Emissions Guidebook and Calulator
- Sketch7 VMT Spreadsheet Tool
- COMMUTER
- Envision Tomorrow
- URBEMIS
- CalEEMod
- Smart Growth INDEX 2.0
- Low-Carb Land
- CommunityViz
- TRIMMS
- EMME
- I-PLACE3S
- STEAM
- Urban Footprint
- UrbanSim
- EPA MXD tool
- MXD+/Plan+/TDM+ Toolkit
- CUTR_AVR
- NEMS TSM
- VMT Impact Tool

SB 743 Summary

SB 743 recommendations on safety suggest potential adverse impacts of project traffic on traveler safety.

(3) Local Safety. In addition to a project's effect on vehicle miles traveled, a lead agency may also consider localized effects of project-related transportation on safety. Examples of objective factors that may be relevant may include:

(A) Increase exposure of bicyclists and pedestrians in vehicle conflict areas (i.e., remove pedestrian and bicycle facilities, increase roadway crossing times or distances, etc.).

(B) Contribute to queuing on freeway off-ramps where queues extend onto the mainline.

(C) Contribute to speed differentials of greater than 15 miles per hour between adjacent travel lanes.

(D) Increase motor vehicle speeds.

(E) Increase distance between pedestrian or bicycle crossings.

Jurisdictions

Work in progress:

- Basic Literature Review templates follow; some remain in draft form or to be completed (TBD)
- Bellingham, WA to be added based on award-winning concurrency process
- Suburban PA and NY jurisdictions (Montgomery, Westchester) not relevant due to State-muni details (Counties not a player)
- Other potential benchmark communities topic for discussion

Jurisdictions

County-stat – similar jurisdictions to consider

Jurisdictions in the National Benchmark

Metro Area	Jurisdictions
DC	Montgomery County, MD Howard County, MD Anne Arundel County, MD Fairfax County, VA Arlington County, VA Loudoun County, VA Prince William County, VA
New York	Nassau County, NY Rockland County, NY Suffolk County, NY Westchester County, NY Bergen County, NJ
Newark/ Trenton	Morris County, NJ Somerset County, NJ Middlesex County, NJ Monmouth County, NJ
Milwaukee	Waukesha County, WI
Denver	Douglas County, CO

Metro Area	Jurisdictions
Philadelphia	Bucks County, PA Chester County, PA Montgomery County, PA
San Francisco	Contra Costa County, CA Marin County, CA San Mateo County, CA Santa Clara County, CA
Los Angeles	Ventura County, CA
Chicago	DuPage County, IL Lake County, IL
Indianapolis	Hamilton County, IN
Detroit	Oakland County, MI
Minneapolis – St. Paul	Dakota County, MN Washington County, MN
Dallas	Collin County, TX
Houston	Fort Bend County, TX
Kansas City	Johnson County, KS

Jurisdictions

9/29 DRAFT Table of contents

Jurisdiction	State	Status
Montgomery County	MD	draft
Los Angeles	CA	draft
Pasadena	CA	draft
San Francisco	CA	draft
San Jose	CA	draft
Boulder	CO	TBD
Washington	DC	draft
Broward County	FL	draft
Kissimmee	FL	TBD
Orlando	FL	TBD
Boston	MA	TBD
Baltimore	MD	draft
Gaithersburg	MD	draft
Rockville	MD	draft
New York	NY	draft
Westchester County	NY	N/A
Portland	OR	TBD
Montgomery County	PA	N/A
Pittsburgh	PA	draft
Alexandria	VA	draft
Arlington County	VA	TBD
Fairfax County	VA	draft
King County	WA	draft
Seattle	WA	draft

Appendix A – Jurisdiction-Level Reviews

This Literature Review incorporates a state-of-the-practice summary of jurisdictional practices for development review and approval to mitigate the impacts of site-generated traffic across all modes. Montgomery County, MD is listed first, followed by the jurisdictions identified in Table A-1. For each jurisdiction, several pages identify key characteristics of variables in a template format designed to facilitate comparison to Montgomery County, but retain descriptive flexibility to highlight unique or innovative practices. The template includes the following information:

- Jurisdictional context: A brief description of the jurisdiction in terms of regional and national context including location, size, and general/overall procedural approach to transportation impact mitigation.
- Development impact policy tools: An introduction to the range of applicable exaction categories including impact taxes/fees, local area transportation impact studies, larger area transportation impact studies, or other devices; as well as how the tools are inter-related.
- Context-sensitive variance: The degree to which policy nuances or exceptions create notable alternative review processes or requirements for certain geographic or functional areas are treated differently
- A synopsis of development impact process types:
  - Local area review (i.e., standard Transportation Impact Study) analysis thresholds, including minimum development thresholds, analysis tools and techniques, and mitigation approaches.
  - Regional or areawide processes, if applicable,
  - An impact tax or fee, if applicable, and
  - Any other type of approach that doesn't fall into one of the prior three categories
- Where to next?: A synopsis of the status and considerations in any notable ongoing or planned updates to the policies and tools.

In general, there are two bases for comparative judgments made in the following reviews:

- A comparison to Montgomery County may be appropriate since Montgomery County is both the subject of the overall study as well as the jurisdiction with which most report reviewers will be familiar
- A comparison to the recommendations in the Institute of Transportation Engineers *Transportation Impact Analyses for Site Development Recommended Practice* may be appropriate to provide a sense of scale against practices reviewed nationwide.

LATR Option Screening

Group discussion

- What best practices appear most transferable?
- The question depends on the County's desired approach to LATR objectives for:
  - **Analysis** complexity
  - **Predictability**
  - Ease of **Implementation**
- Recognize that these objectives are in the eye of the beholder:

LATR Option Screening

Analytic scope

Objective	Example	Strength	Weakness
Low traffic volume thresholds for study	Montgomery County, Rockville	Information on deficiencies	Time and cost (public and private sectors)
Mode-specific study thresholds	Rockville, Alexandria, Washington DC, New York	Targets attention to modes based on expected or desired demand	Boundary issues
Context-sensitive study thresholds	Various	Targeted use of resources	Boundary issues
Explicit ped/transit/bike/ freight/safety modal LOS or operational analyses	Washington DC, New York	Improved information on deficiencies and nexus	Time and cost (public and private sectors)

LATR Option Screening

Analytic scope - predictability

Objective	Example	Strength	Weakness
Flexible definition of mitigation	Multiple	Simple to administer	Unpredictable, may be inconsistent
Exempt challenging deficiencies	Potomac policy, San Jose Protected Intersections	Removes policy conflict, reduces cost	Doesn't solve problem (public sector, community)
Lookup tables for v/c ratios	Seattle screenlines	Expedited review	Lack of information

LATR Option Screening

Analytic scope - implementation

Objective	Example	Strength	Weakness
Pay-and-go options in urban districts	White Flint, Baltimore Kissimmee MMTD	Speed, predictability (private sector)	Funding, construction complexity (public sector, community)
Payment with VMT basis	King County Payment Mitigation System	Robust VMT analysis on public side to apportion responsibility, simple for private side	Black box basis may limit political feasibility unless combined with other policy tools
Dedicated transit / TDM revenues	Broward County concurrency	Overlays / supplements local processes	Limits spending flexibility

Next Steps

For November meeting

- Follow-up on questions from Literature Review
- Submit completed draft Literature Review
- Expand pros/cons on screening and draft short list of concepts to investigate
- Develop hypotheses on how short list of concepts would be applied in Montgomery County
  - Geographies (MSPAs, urban areas, BRT routes, etc.)
  - Linkage between LATR, TPAR, impact tax
  - Balance of analysis, predictability, implementation